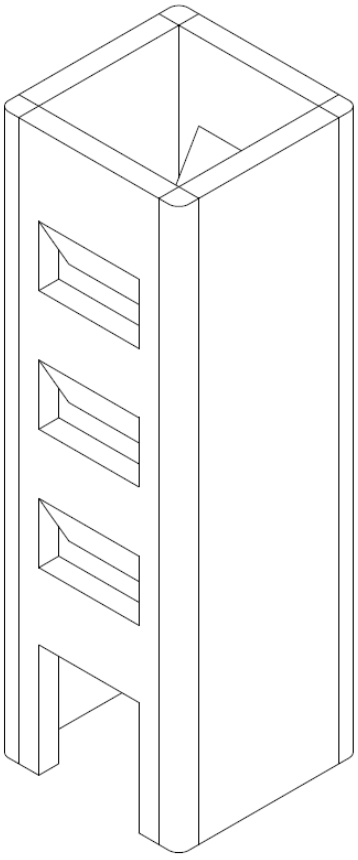
McKenzie Valve & Machining LLC

# Surge Suppressor

Product Literature &
Maintenance Guidelines

Current Issue Revision: November 2023



# 1. Installation

1.1. This device is installed by welding it to the underside of the tank car fittings flange.

1.1.1. Welding must be performed at a certified facility by a qualified welder using a qualified welding procedure in accordance with AAR MSRP CIII, Appendix W. The weld must have an effective throat equivalent to 1/4 inch.

1.1.1.1. The use of a 3/8 inch all-around fillet weld is recommended for this application.

1.1.1.2. The device is 316L stainless steel material.

1.1.2. A maximum 2 1/4 inch diameter hole can be used on the fittings flange to allow commodity to flow to the pressure relief device mounted above. Once installed, the surge suppressor surrounds the hole in the fittings flange; it is not intended to be inserted into a hole or secondary nozzle. If a secondary nozzle is used, this device should be welded to the fittings flange directly below the nozzle. Center the surge suppressor around the hole in the fittings flange.

1.1.3. The flat, non-vented sides of the surge suppressor must face the “A” and “B” ends of the car for proper device function.

1.1.4. Figure 1 below demonstrates the expected installation on a car.

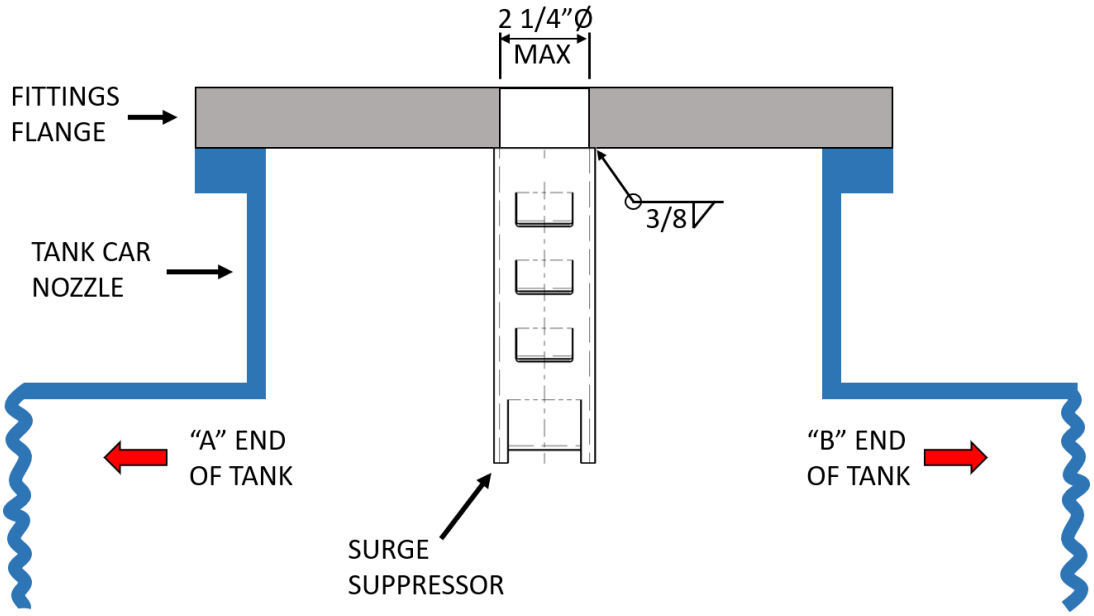



**Figure 1**: Surge Suppressor Installation
(not to scale)

## 2. Inspection and Maintenance

2.1. The surge suppressor should be inspected to ensure no tabs have become bent past their intended position. If the tabs have become excessively bent in such a way that they impede flow through the hole above, replace the device.

2.1.1. The 6 small tabs are designed to be 30 degrees and the bottom tabs are placed at 45 degrees. See Figure 2 below.

2.2. To remove the device from the fittings flange, the weld connecting them must be ground or gouged off.

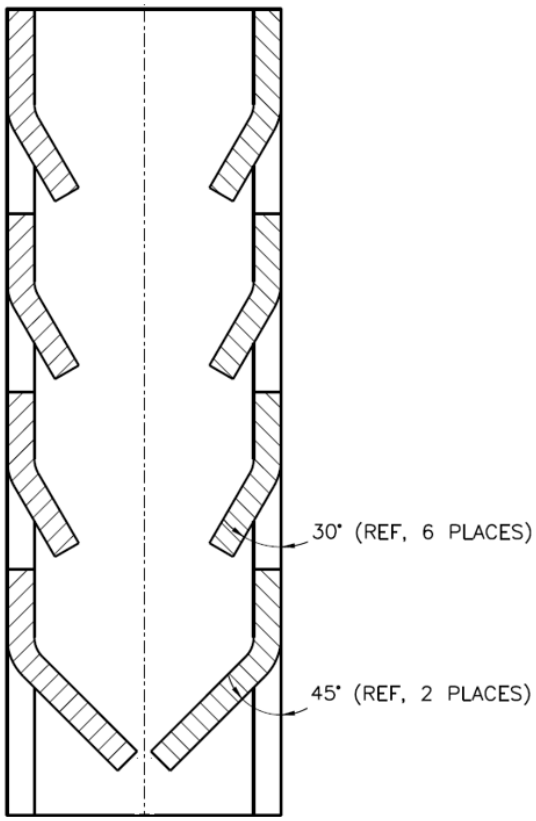



**Figure 2**: Section View Showing Tab Angles

## 3. Flow Information

3.1. The discharge flow coefficient of the surge suppressor with a 2 inch diameter hole or nozzle above it is 0.649 at 88 psi and 0.647 at 181.5 psi.

3.2. The average flow capacity of the surge suppressor with a 2 inch diameter hole or nozzle above it is 3822 SCFM of air at 88 psi and 7410 SCFM of air at 181.5 psi.

## 4. Revisions

| Date | Section | Revision |
|---|---|---|
| 11/9/2023 | N/A | Initial Issue |